May—June 1989

FAA Aviation NEWS

A DOT / FAA FLIGHT STANDARDS SAFETY PUBLICATION

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U.S. Department
of Transportation

**Federal Aviation
Administration**

FAA Aviation NEWS

May/June 1989

Volume 28, Number 3

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BRIEFS

FRIENDLY PERSUASION. An emphasis on "Compliance Through Education" as a means of maintaining high standards of safety in aviation was expressed by Transportation Secretary Samuel K. Skinner, a keynote speaker at the annual spring Sun 'n Fun meeting of aviation enthusiasts at Lakeland, FL. The 15th annual fly-in, sponsored by the Experimental Aircraft Association, featured seminars on proper methods of aircraft construction utilizing metal, composite, wooden and fabric materials.

ALTITUDE VERIFICATION. Users of Mode C transponders should be fully aware that any error in their radar-reported altitude would not be discernible by air traffic control--accuracy of the system is the pilot's responsibility.

All transponders must be checked by a repair station every 24 months. For IFR use in controlled airspace, additionally required testing includes pressure sensing and automated altitude reporting systems. VFR pilots using Mode C are encouraged to have similar testing done.

Furthermore, when receiving ATC advisories in flight all pilots should ask ATC to read them the altitude their transponder is displaying, following every altitude assignment. It should be compared with the cockpit altimeter readout and any significant discrepancy would indicate that the safety of continuing as assigned could be in jeopardy.

CHILD RESTRAINTS. In a recent accident a three-year old child, being held without a restraint by a passenger, was ejected from the aircraft after it stalled and crashed on takeoff. The child received fatal injuries. Pilots are reminded that FAR §91.14 requires each person over the age of two on board an aircraft to occupy his/her own seat, with the seatbelt (or harness if available) securely fastened prior to takeoff or landing.

CALLING ALL STARS. Airmen concerned about encountering unearthly aircraft in flight would be interested, on their next visit to the Nation's capital, in seeing the new "sky show" in the planetarium of the Air and Space Museum. This three dimensional presentation explains the probability of intelligent response to the avalanche of radio messages beamed from our planet into the universe in the current century.

The Recreation Pilot Certificate

FAA has issued an important amendment to Federal Aviation Regulation Part 61 which includes the first new category of general aviation pilot certificate in nearly a half century, *the recreational pilot.*

These changes are expected to improve the competency of low-time pilots. They are also expected to reduce, by approximately one-quarter, the cost and the training hours needed to achieve initial pilot-in-command status. The minimum number of total flight hours for the recreational pilot certificate is 30, compared with 40 for the private pilot.

This amendment will be effective August 31, 1989. In addition to provisions for a recreational pilot certificate, the new amendment to FAR Part 61 will include requirements for:

- A pre-solo written test for *all* student pilots.
- Increased visibility minimums for *all* student pilot operations.
- An annual, instead of biennial, review of recreational pilots who have logged fewer than 400 hours of flight time and non-instrument rated private pilots who have logged fewer than 400 hours of flight time.
- The flight review will consist of a minimum of one hour of flight instruction and one hour of ground instruction.

The new recreational pilot certificate is suitable for persons willing to limit their flying to a basic, single-engine aircraft (standard, experimental, or homebuilt), fixed gear only, for which only one pilot is required. Applicants for the certificate must hold at least a valid third class medical certificate.

All flight operations must take place within 50 nm of the airport at which ground and flight instruction was received from an authorized CFI. Other limitations and privileges for the recreational pilot include:

1. May not carry more than one passenger, but may share operating expenses of the flight with the passenger.
2. May not act as PIC in an aircraft that is certificated for more than four occupants, has a powerplant more than 180 h.p., or has a retractable landing gear.
3. Maximum altitude: 10,000 MSL or 2,000 AGL, whichever is higher.
4. May not operate between sunset and sunrise.
5. Minimum visibility, three statute miles with visual reference to ground at all times.
6. No international flights.
7. No operations for compensation or hire or in furtherance of business activities.
8. No towing of any objects.
9. No operations in airspace that require communications with Air Traffic Control.
10. No flight demonstrations for prospective aircraft buyers.
11. No passenger-carrying airlift for charity.

QUESTIONS AND ANSWERS

Q. Since a recreational pilot may not fly at night or in areas where ATC contact is required, does it matter whether the lights or radios in the airplane are working?

A. Yes it does. The recreational certificate does not allow a pilot to disregard minimum equipment requirements. If the aircraft has an operable, properly maintained transponder, it must be on during all phases of flight and tuned to the appropriate code. (See accompanying article on MEL)

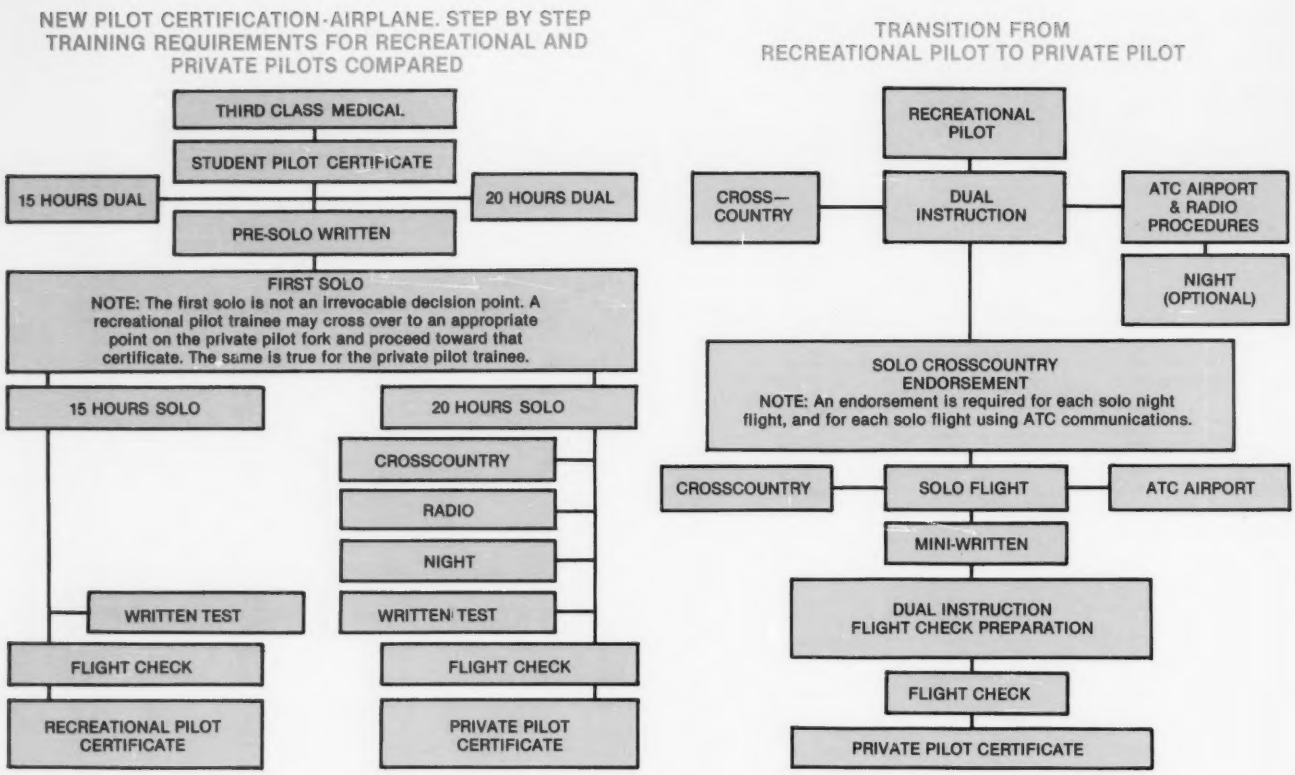
Q. Suppose a recreational pilot trains in an airplane without any avionics. After receiving a certificate, what happens if he or she rents an airplane with radios?

A. The written and practical examinations for recreational pilots will test their knowledge of basic avionics equipment operation. Applicants will not be able to take the flight test until they are knowledgeable on this subject.

Q. What if a recreational pilot moves to another state or wants to rent an airplane while on travel. Can that be done legally?

A. Yes, as soon as a certificated flight instructor provides appropriate local ground and flight orientation and instruction and endorses the pilot's logbook. The recreational pilot's endorsements must be carried with him or her in the aircraft.

For further information contact FAA, AFS-840, 800 Independence Ave. S.W. Washington, D.C. 20591. Telephone (202) 267-8196.


NEW PILOT CERTIFICATION-AIRPLANE. STEP BY STEP TRAINING REQUIREMENTS FOR RECREATIONAL AND PRIVATE PILOTS COMPARED
THIRD CLASS MEDICAL
STUDENT PILOT CERTIFICATE
15 HOURS DUAL
20 HOURS DUAL
PRE-SOLO WRITTEN
FIRST SOLO
NOTE: The first solo is not an irrevocable decision point. A recreational pilot trainee may cross over to an appropriate point on the private pilot fork and proceed toward that certificate. The same is true for the private pilot trainee.
15 HOURS SOLO
20 HOURS SOLO
CROSSCOUNTRY
RADIO
NIGHT
WRITTEN TEST
WRITTEN TEST
FLIGHT CHECK
FLIGHT CHECK
RECREATIONAL PILOT CERTIFICATE
PRIVATE PILOT CERTIFICATE
TRANSITION FROM RECREATIONAL PILOT TO PRIVATE PILOT
RECREATIONAL PILOT
CROSS—COUNTRY
DUAL INSTRUCTION
ATC AIRPORT & RADIO PROCEDURES
NIGHT (OPTIONAL)
SOLO CROSSCOUNTRY ENDORSEMENT
NOTE: An endorsement is required for each solo night flight, and for each solo flight using ATC communications.
CROSSCOUNTRY
SOLO FLIGHT
ATC AIRPORT
MINI-WRITTEN
DUAL INSTRUCTION FLIGHT CHECK PREPARATION
FLIGHT CHECK
PRIVATE PILOT CERTIFICATE

12. May fly as sole occupant of an aircraft for the purpose of obtaining additional certificates and rating while under the supervision of an authorized flight instructor and with appropriate logbook endorsement. (See FAR §61.101 for further details.)

SAFETY CONSIDERATIONS

Recreational flying is expected to increase the safety of low-time pilots by improving visual familiarity with the flying environment. This is accomplished by requiring recreational pilots to receive detailed instruction, by a certificated flight instructor, for the airspace within a 50 nm radius of the airport from which the instruction is given. This would include familiarization with traffic patterns, obstacles to navigation and other hazards, as well as prominent landmarks.

Instruction is given as to the depiction of TCA's, ARSA's, airport traffic areas and other controlled airspace in which the recreational pilot is prohibited. The location of any such airspace within the 50 nm radius of the pilot's airport is reviewed.

An applicant for the recreational pilot certificate will be required to successfully complete the FAA recreational pilot written test and the appropriate practical test outlined in the recreational pilot practical test standards.

When the test is taken in an aircraft equipped with a radio and/or a transponder, the pilot must be able to demonstrate a basic understanding of their use, including in-flight requests for weather information, controlled and uncontrolled traffic advisories, emergency transmissions (simulated), and transponder operation. Pilots using aircraft without avionics will be orally tested by the examiner on the above-described use of radio and transponder.

Training for the recreational pilot certificate emphasizes continuing dependence upon outside-the-cockpit alertness, thereby improving pilot performance with regard to collision avoidance.

Furthermore, the limitation to daytime operations and visibility of at least three miles may reduce the likelihood of accidents involving inadvertent penetration of instrument weather conditions by low-time, VFR-only pilots. According to NTSB statistics, such pilots are most often involved in this kind of accident. The recreational pilot must maintain visual reference to the surface at all times. Flight "over-the-top" of clouds is prohibited.

Additionally, a recreational pilot with fewer than 400 hours of flight time, who allows a period of 180 days to elapse without exercising PIC privileges, may not act as PIC until receiving flight instruction from an authorized flight instructor. The CFI must then certify in the pilot's logbook that the individual is competent to act as PIC of the aircraft. All other currency requirements, including the Annual and/or Biennial Flight Review, remain in effect.

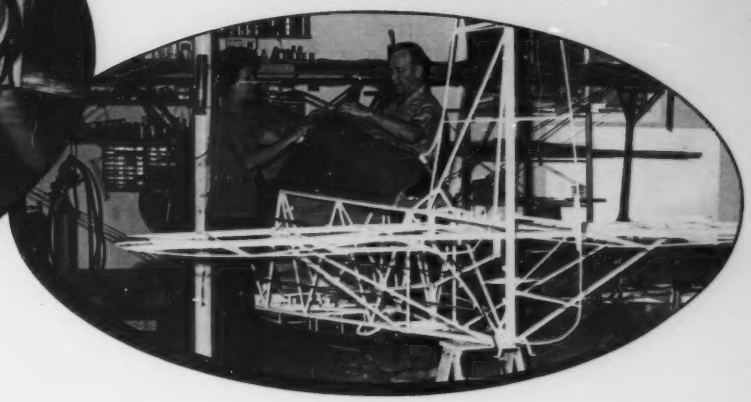
A category for student recreational pilot was purposely not adopted. Instead, the existing student pilot certificate category was amended to permit training for either the recreational or the private pilot certificate. This enables the recreational pilot certificate to be used as a building block toward earning the private pilot and other more advanced certificates and ratings.

Why all these changes? The Federal Register (March 29, 1989) perhaps stated it best. "Establishment of the recreational pilot certificate category will improve the attractiveness of flying as a hobby in comparison to other forms of recreational activity from which the public may choose." ■

TRANSITION TO PRIVATE PILOT

A certificated recreational pilot who wishes to advance to a private pilot certificate must receive additional training to prepare for solo cross country flight, night flight, and operations in airspace that requires communication with Air Traffic Control. The pilot must also pass the private pilot written examination, receive practical test preparation, and pass the practical test for private pilots.

Primary Category Aircraft



FAA is currently seeking suggestions and comments from the aviation public on a proposed new rule which would create a new "Primary Category Aircraft," with simplified procedures for certification and associated maintenance.

If enacted this rule change, proposed by general aviation pilot organizations, would make available aircraft that would be less costly to certificate, produce, purchase and maintain than current standard category aircraft. It is also expected to stimulate the introduction of new, less costly airplane designs; to enable kit manufacturers to fill the demand for low-cost aircraft; and to improve the safety level of kit-built aircraft presently being certificated as "Experimental" or "Amateur-built."

The new rule would include airplanes, gliders, rotorcraft, and manned free balloons, etc. which have:

- A maximum gross takeoff weight of no more than 2,500 lbs.
- Unpowered or powered by a single, naturally aspirated engine rated at no more than 200 hp.
- An unpressurized cabin.
- An accommodation for no more than four persons.

Other provisions of the proposed new rule would:

1. Permit the Administrator to approve airworthiness standards and establish certification procedures appropriate for such primary aircraft, including engines and propellers, based upon complexity of the design, and issue type certificates for these aircraft.
2. Prohibit the carriage of passengers or property for compensation or hire in such primary aircraft.
3. Permit owners of primary aircraft to perform specified special inspection and preventive tasks maintenance on their aircraft.
4. Provide a means for the purchaser of a kit of prefabricated parts from the holder of a type certificate and a production certificate for a primary category aircraft to complete the project and obtain a special airworthiness certificate primary category.
5. Provide for the conversion of standard category aircraft which have been certificated for operation in the normal, utility, or acrobatic category to be operated as a primary category aircraft.
6. Protect against fraudulent or intentionally false statements to the FAA by suspending or revoking the FAA certificate, approval or delegation.

Eligible for inclusion in this category would be such popular type-certificate aircraft as the Cessna Model 172 *Skyhawk*, the Piper PA-28 *Warrior*, and the Beech Model C-23 *Sundowner* Series.

Also included for eligibility would be powered ultralight vehicles (currently not regarded as "aircraft"), to be designated "primary category light aircraft." Such aircraft, having a maximum certificated gross weight of 1,000 lbs. or less, could be type certificated and issued airworthiness certificates.

All primary category aircraft would be of simple design and intended solely for personal and pleasure use. No persons or property could be carried for hire.

Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. All comments must be submitted on or before September 7, 1989.

Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the proposals in this notice are also invited. Substantive comments should be accompanied by cost estimates. Comments on this notice should be mailed in triplicate, to: Federal Aviation Administration, Office of the Chief Counsel, Attention: Rules Docket (AGC-10), Docket No. 23345, 800 Independence Avenue, SW, Washington, DC 20591. Comments delivered must be marked Docket No. 23345. All comments received on or before the specified closing date for comments will be considered by the Administrator before taking action on this proposed rulemaking. The proposals contained in this notice may be changed in light of comments received.

All comments will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. Comments may be examined in Room 915G weekdays between 8:30 a.m. and 5 p.m., except Federal holidays. A report summarizing each substantive public contact with Federal Aviation Administration (FAA) personnel concerned with this rulemaking will be filed in the docket. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a pre-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 23345." The postcard will be date stamped and mailed to the commenter.

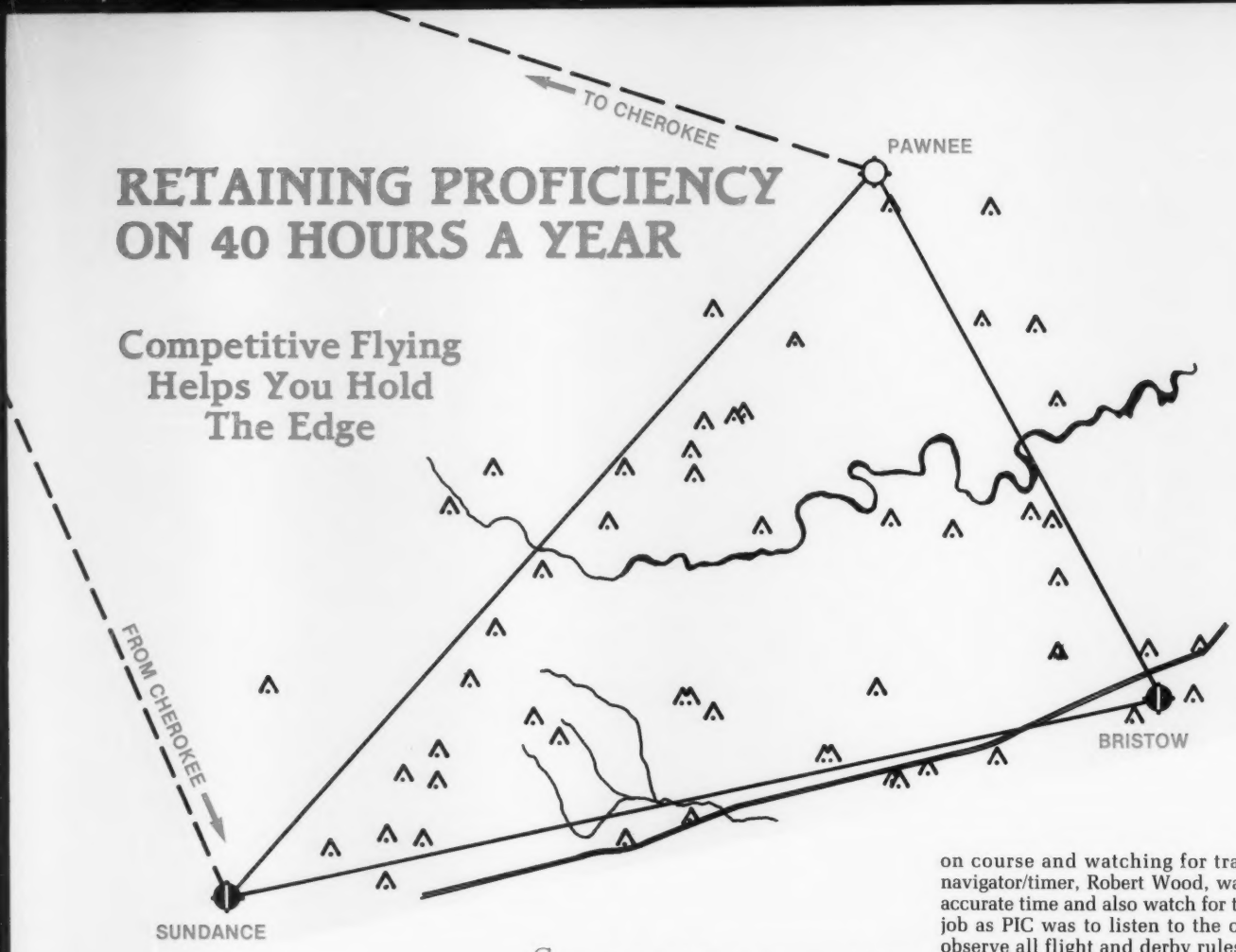
Any person may obtain a copy of the NPRM by submitting a request to the Federal Aviation Administration, Office of Public Affairs, Attention: Public Information Center (APA-230), 800 Independence Avenue, SW, Washington, DC 20591, or by calling (202) 267-3484. Communications must identify the notice number of this NPRM.

Persons interested in being placed on the mailing list for future NPRM's should request from the above office a copy of Advisory Circular No. 11-2A. Notice of Proposed Rulemaking Distribution System, which describes the application procedures.

For further information contact: Lyle C. Davis, Aircraft Engineering Division, AIR-110, Aircraft Certification Service, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591. Telephone (202) 267-9583. ■

RETAINING PROFICIENCY ON 40 HOURS A YEAR

Competitive Flying Helps You Hold The Edge



If you are the typical occasional weekend VFR pilot, you may average only about 40 hours of flight time a year. Is that enough to retain the aeronautical knowledge you needed to pass the written test?—to add to, or even solidify, the level of skill at the controls you once achieved?

If you are realistic about it you will probably answer NO, and quickly point out that you shore up your flying status by taking refresher courses, attending pilot seminars, and reading aeronautical literature. Most of us will agree that these activities can be very helpful in the enjoyment of flying and in the prevention of accidents. But there is another means of sharpening your skills and attentiveness which appeals to many low-timers: the proficiency derby in which winning depends on not how fast you fly, but how close your estimates (as regards time and fuel consumption) match your actual performance.

The following is an account of such a flying experience by Robert C. Hall, an Oklahoma pilot who hones up his flying skills by flying regularly in the annual "Okie Derby."

Since I started flying in 1972 I have proudly accumulated a commercial certificate and instrument rating. However, I rarely use them as I can only find time to fly about three or four hours a month—I qualify as your typical occasional weekend pilot.

To avoid the ever present hazards of complacency, for the past 10 years I have participated in the Okie Derby, a proficiency flying event sponsored by the Oklahoma Chapter of the 99's. The objective of this event is to demonstrate the pilot's ability to fly a closed crosscountry course as near as possible to the ETA and fuel consumption estimates set by each contestant before the race.

The advantages of flying in such a derby is that it gives you a chance to discover your weaknesses while on a relatively simple, short crosscountry, without many of the hazards you might encounter in an extended flight over remote terrain—such as flying to Alaska. It also helps, in case you get into trouble, that two dozen airplanes are flying the same course. We keep a file of "lessons learned" from each derby so as not to repeat our mistakes too many times.

For the July 1988 derby, we had a three-man crew for our PA-28-181. The copilot, Hal Moore, was responsible for keeping us on course and watching for traffic. The navigator/timer, Robert Wood, was to keep accurate time and also watch for traffic. My job as PIC was to listen to the other two, observe all flight and derby rules, execute our flight plan accurately, and operate the aircraft safely. We started updating our proficiency a couple of months before the derby, using the same rental PA-28-181 we have used for the past seven years.

Everything was as expected at the briefing the evening before the event. Derby rules were discussed and weather given (stationary front with possible light rain showers; winds, surface - 190 degrees at 14 knots, 3,000 feet - 220 degrees at 34 knots). The triangular course began and ended at Sundance Airpark, just northwest of Oklahoma City. Checkpoint observers were stationed northeast of Sundance at Pawnee, a grass strip at the end of the first leg; and at Cherokee, a small general aviation airport to the northwest of Pawnee. Each contestant had to execute a designated fly-pattern over the checkpoint and make radio contact with the observer. A geometric shaped "signifier" would be visible at each checkpoint, and each contestant had to report the shape observed in order to confirm course accuracy. The three of us spent the remainder of the evening flight planning. On the basis of the weather briefing and known climb speed, we worked out our estimate of time and fuel consumption en route.

The next morning found the stationary front had moved to the northwest with

severe thunderstorms shutting out Cherokee as the second checkpoint—so much for weather forecasts. The course was quickly rerouted to a clockwise direction with the second leg to be flown from Pawnee to Bristow in the northeast. So most of an evening's careful flight planning was no longer valid.

New fuel and time estimates had to be calculated. Everyone was frantically plotting the new course in the brief time available. It was about 60 miles shorter and of course the wind effect would be different from flying counterclockwise. Once you made Bristow the Turner Turnpike led the way back towards Sundance—a piece of cake. We found out later it looked all a little too easy.

We were number 17 out of 25 derby entrees to takeoff and easily set our course towards our first checkpoint, Pawnee. Our eyes were straining to find the little-used grass strip when suddenly we saw a small lake about four miles directly in front of the aircraft's nose. Checking on the sectional we could not see any lakes around Pawnee. That bothered us.

Finally it dawned on us that the "chart" we (and others) were using was a machine copy someone had given us during the briefing so we would not have to bother about a second chart at the last minute. (Pawnee is about two inches into the Kansas City sectional chart which covers the northeast portion of Oklahoma.)The problem was that wetland, dry lakes, land, woods, and water all looked alike on the (black and white) copy which differentiated such features in shades of gray.

Fortunately, we sighted the derby spotter's airplane and the signifier to the east side of the little-used grass runway. As a matter of fact, one derby aircraft circled trying to find the Pawnee strip until it was short of fuel. They proceeded to another airport, landed, and called the derby officials to let them know they were dropping out, and why. Saving a few dollars with a copied chart could have been costly in other circumstances.

We approached the Bristow Airport leg of the course with confidence. We thought we knew the winds and there seemed to be plenty of landmarks that would serve as visual navigation references. Confidence is great, but it can work against you. After leaving Pawnee and climbing back to 2,500 feet, we set the heading "bug" to the next leg, punched the two-axis auto pilot on a heading for Bristow, and relaxed a bit.

As we continued on this southwesterly course, the quartering winds suddenly seemed more gusty. Evidently, we had not noticed the turbulence as we descended into Pawnee. Now we had a stiff headwind that slowed our ground speed. The convection currents, which were responsible for the rough air, were showing no signs of smoothing out.

As we approached our first en route checkpoint after leaving Pawnee, it was evident that our magnetic heading for Bristow was not working out—apparently because of a change in wind speed and direction. Ground reference showed us to be about two statute miles off course to the east, so I set a new heading using about a 45 degree intercept angle. Once back on course we checked our time, course speed, and new heading.

We arrived over Bristow without difficulty, despite some haze. We flew the length of the runway on a 170° heading and turned west to set up a course for Sundance on our final leg. However, we found we were south of our planned visual checkpoints (we were supposed to be between a 1,207 foot tower and powerlines). I made a significant correction to the right, sighted the turnpike, and got back on course visually.

Rechecking my heading bug, notes, and the directional gyro versus the magnetic compass I could not readily find the cause of this error. Were the winds pushing us off course again? The same sort of thing had happened to us the year before on the final leg, but we did not catch the mistake until we were about 15 miles off course. We had never solved the heading mystery, as we had to concentrate on flying.

Staying on course was not a challenge for this last leg back to Sundance—we just followed the Turner Turnpike and made a few slight adjustments. All we had to do was manage the time, watch for VMC traffic, and make sure we would not penetrate the new ARSA at Oklahoma City. However, we were not yet home free.

Proceeding towards our final destination we must have relaxed our vigilance a bit and let the throttle vibrate to a lower setting—perhaps I brushed it with my arm, or who knows what. We became aware of the problem while observing the enroute checkpoints, which indicated we were behind our time schedule. Double checking the tachometer I noticed that we had lost about 25 rpm from the planned setting of 2100. I reset the power to 2100 rpm and headed toward the airport and the finish line.

On crossing the official finish line we clocked ourselves at 40 seconds behind our estimated time—the official timer said we were one minute and 40 seconds behind. We were never able to determine who was in error or why. As regards fuel consumption, officially we missed our fuel estimate by .5 of a gallon. But looking over our figures later, we discovered that the short-cut method we used to estimate fuel consumption over the past few years had came back to bite us. When the course distance was changed from the normal 250 statute miles to 192, shortening the course caused our average fuel consumption to go up (since we spent proportionally more time for anything else but cruise). Some short cuts can be bad habits. If we had made allowances for the shorter course, 12.3 gallons would have been our fuel estimate and we would have been off only by .1 gallon. Fuel is the most critical factor in Derby estimates, but isn't that also true of any VMC crosscountry flying?

In computing each contestant's final score it does not make any difference whether you under or over estimate your time or fuel. The scores are calculated by dividing the actual time or fuel by the estimated time or fuel and multiplying by 100 to convert to a percentage. If the number is greater than 100 it is subtracted from 200. The fuel and time numbers are than added together and divided by 2, giving the combined percentage and the contestant's rating.

Needless to say we did not win the trophy for first place, but at least we avoided the last place trophy which displays half a mule (the posterior end). We came in eighth (we would have been fourth if we had estimated our fuel correctly). The lessons learned from an event such as this are many. Without an exception, everyone I have talked to seemed to know where they had "goofed" and was willing to share their information, however embarrassing. We departed for home with the satisfaction that the experience was the real value of the derby, not how high we placed. (Rationalization is a wonderful antidote for frustrations!)

The competitive sense we experience in these derbies does more than anything else to make me realize that apparently insignificant errors can add up to a painful conclusion. In this case, only our pride was hurt. ■

Editor's Note: Mr. Hall is Manager of FAA's Regulatory Support Division in the Aeronautical Center at Oklahoma City. He is not an agency pilot, but flies on his own time and in his own interests.

See accompanying article on "Recreational Pilots" for new regulations concerning currency requirements.

THE DOMINO EFFECT

ALL AIRCRAFT ALTERATIONS ARE POTENTIALLY HAZARDOUS

Recently enacted and proposed changes to the Federal Aviation Regulations constitute an expansion of the pilot/owner's role in maintaining general aviation aircraft. However, no rule-making has or will change the fact that aircraft are extremely sensitive, as regards flight characteristics, to non-approved modifications of any kind.

Few, if any, conveyances designed by man are as sensitive to change as an aircraft. The structural integrity and dynamic balance of aircraft can be weakened by seemingly harmless alterations. An ashtray or pen holder fastened to the interior wall of the cockpit could have serious consequences in flight if the (unqualified) installer weakened a structural member or cut into a wire or tube when he drilled into the frame. A portable radio or coffee heater tapped into the aircraft electrical system could, in the event of malfunction, cause an electrical overload that could shutdown vital aircraft systems. An antenna installed without qualified supervision could interfere with other avionics equipment. Even a coat of paint, if unevenly applied, could upset the delicate balance of control surfaces, and perhaps induce a dangerous flutter. A decal, carelessly stuck on the fuselage, could block static or drain holes with potentially serious effects.

The classic example of an alter-in-haste, repent-in-sorrow airplane owner concerns a pilot/owner of a newly acquired light plane which delighted him in every way—except that there was no lock on the door. Since the plane was to be tied down outside at night, he was concerned about the possibility of it being stolen. He went to a hardware store, bought a lock, drilled a hole in the door and frame, and installed it himself. Then he topped his tanks and took off for an afternoon of pleasant flying. When he came back at dusk and parked the aircraft he made a discovery; he was locked inside his own airplane. The lock he had installed snapped into place automatically when the door was shut, and he had not provided any inside release. There was no other exit, not even a baggage door. It was after 6:00 p.m., the local UNICOM was shut down, and the ramp was deserted. He considered radioing the FSS to send help, but just felt too embarrassed to describe his predicament. It was three hours later before his wife finally found him. Supposing he had crash landed and fire broke out!

In this case, fortunately, no harm was done except to a pilot's pride, but the story points up the danger of unapproved aircraft alterations, which in other cases have led to serious and even fatal accidents.

All aircraft alterations must be performed by or under the supervision of a certificated and appropriately rated person, and entered into the maintenance log. Otherwise the aircraft is no longer airworthy, and may be unsafe to fly.

How is an alteration defined?

A major alteration is defined as any alteration not listed in the aircraft, engine, or propeller specifications that:

(1) Might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness, or

(2) Is not done according to accepted practices or cannot be done by elementary operations.

Any other type of change to the type certification design is a minor alteration.

Major alterations must be performed in accordance with FAA-approved data under the supervision of the holder of an Authorized Inspection Certificate, who alone can return the aircraft to service. Aircraft undergoing minor alterations must be returned to service by a certificated and qualified mechanic.

The various systems of an aircraft, especially the more complex aircraft now common even in general aviation, are so finely balanced against one another that, like a row of dominoes, the slight displacement of one piece may affect many others at considerable distance. Not only the workmanship must be first rate, but full consideration must be given to all possible implications of the design change on performance or structural characteristics. This includes air flow over the various surfaces, vibrations, metal fatigue, internal temperatures, and a myriad of other ramifications not visible to the naked eye—which may require flight testing as well as theoretical computation.

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For example, the owner of a light airplane who liked to fly aerobatics had a larger engine installed in his airplane. The battery was moved aft from near the firewall to a location near the tail, where it appeared to best satisfy the weight and balance requirements. However, one day the airplane entered a spin and could not be recovered in time to prevent a fatal crash. The subsequent investigation disclosed that while the balance had been properly computed, no consideration had been given to the inertia effect of a mass of weight in the tail area during the spin. Apparently the aircraft with this alteration did not have sufficient control response to stop the rotation of a fully developed spin. A subsequent flight test, using a drag chute to stop the spin, confirmed this assumption.

Every alteration to an aircraft has potential effect on its performance or structural integrity. Some of the more common alterations include:

Additional equipment. This may include extra seats, cabin fire extinguishers, autopilots, additional lights, heaters, etc. A major concern is the effect of weight and balance. In some small aircraft the center of gravity range is no more than six inches, and a few pounds of weight that extends the C.G. beyond that range might lead to derogation of control. Additional equipment can easily build up weight to a point where passenger load must be reduced in order to fly within the allowable maximum gross weight.

A fire extinguisher is a good safety item, certainly, but its installation is important, and not merely because of the weight factor. If it is simply fastened to an interior panel, perhaps made of plastic or thin wood, it may tear loose as a result of turbulence, a minor crash, or rough landing. An extinguisher weighing four lbs. or more hurtling through the cabin could become a deadly projectile.

Additional equipment such as autopilots, lights and heaters must be considered for their electrical power drain, as well as their weight. An alternator capable of supplying higher amperage than the original equipment may be needed. This too may mean additional weight, and could require heavier wiring, more circuit breakers, etc.

Avionics. The installation of radios, including an emergency locator transmitter, is an alteration affecting the exterior as well as the interior of the aircraft. The location of antenna may affect the flow of air over the fuselage or other surfaces, and if improperly positioned could cause flutter or other adverse aerodynamic problems. The location of the ELT antenna is of key importance with regard to postcrash functioning—its primary intended function.

Propellers. A different type of propeller could set up vibrations in a frequency which could adversely affect engine performance. The spinner of the propeller, incidentally, cannot be removed in some aircraft without leading to overheating of the engine in flight. Such spinners are designed to direct cooling air into the cowling.

Landing gear. The installation of floats, which have considerable effect on the aerodynamics of the airplane, are a major alteration.

Note: The installation or removal of wheel fairings on some aircraft may alter flight characteristics—particularly the nose wheel fairing. In certain aircraft the mechanism which connects the steerable nose wheel with the rudder relies upon the fairing to streamline the wheel and neutralize the rudder. If the latter is removed, the wheel could remain sidewise in flight and increase drag perceptibility. The "Required Equipment" list should be consulted before attempting to remove a wheel fairing.

Caution: Do not, in the interest of beautification, remove any parts whose function you do not understand. One example is the "stall strip" a slender, triangular, or half-round piece of metal fitted against the leading edge of the wing, usually near the root. Its purpose is to cause a stall to begin at the root of the wing, rather than outboard. The strips are occasionally removed, out of ignorance of their function.

Replacement parts. All parts must be replaced by parts which have been tested and approved in accordance with FAA regulations. Responsibility for conformance rests with the owner/operator. For example, several recent cases have come to light wherein automobile batteries were installed as replacements on aircraft. Such an installation would constitute a major alteration, and require appropriate testing and FAA approval.

Alterations must be performed by properly rated maintenance "entities," certificated by FAA, such as repair stations or mechanics. A description of the work must be entered in the maintenance record before the aircraft is approved for return to service. Moreover, the data upon which the alteration is based must be approved by FAA.

In some cases, where FAA-approved data and/or a supplemental type certificate (STC) for the same alteration on the same make and model of aircraft already exists, conformance to requirements is simplified. A summary of previous approvals may be examined in the local Flight Standards or General Aviation District Office. This summary also list the names and addresses of persons who have been granted approvals, so that they may be contacted in the pursuance of data. The District Office will also advise whether "field approval" is possible for the proposed alteration, or whether it will require regional engineering evaluation and a supplemental type certificate.

In other cases new data must be developed, involving considerable engineering work and/or bench and flight testing. Some alterations require the issuance of a Supplemental Type Certificate. This can be a lengthy and expensive process.

A field approval is limited to "one aircraft only" or may permit multiple duplication. The deciding factor is the extent and reproductivity of the data. Approval may be granted purely on the basis of given data, or the inspector may also call for flight testing.

The number of FAA engineering personnel available for issuing approvals for major alterations is limited. However, nongovernment agents, known as Designated Engineering Representatives (DER) are available to assist applicants seeking approval. A list of local DER's may be consulted at the District Office.

The road to FAA approval for a major alteration may be long or short, depending largely upon how frequently it has been trodden before. Aircraft owners may become impatient at delays and over expenses incurred, but there is simply no short cut to safety in aviation.

Above all, always discuss your intended alterations with your local FAA Manufacturing Inspection, Flight Standards, or General Aviation District Office (MIDO, FSDO, or GADO) before you do the work.

Then do it right or not at all.

Where There's a Hill There's a Way

Mountain living and aircraft ownership are not necessarily incapatible, but—

Like many a pilot who trained in the Air Force and moved on to a non-related civilian career, I often dreamed of owning my own airplane some day. I visualized living in the country with enough acreage to accommodate a trusty tail dragger and an old barn converted to hangar and maintenance shed.

Well, eventually we did move to the country and acquired an old farmstead with a pond, a field, and assorted woods for the youngsters to roam through. The only problem, as far as an airplane was concerned, was that we located on a mountain slope—which had a great view, but not much level land.

Just the same, as soon as we were settled in I surveyed the area foranoperating site. Our parcel of some 20 acres extended from a western ridge down to woods that rambled along the eastern border. The north and south property lines were fenced, initially to keep cattle, now to keep horses. Our only meadow was an oblong bench above the tree line. It was about 1,000 feet long, north to south, perfect for a grass landing strip—except for the large pond in the center, formerly a water supply for cattle but now a swimming and fishing hole for the neighborhood youngsters.

At the dinner table I mentioned the thought of filling in the pond. ("We didn't really want to be breeding mosquitoes there, did we?") But the wail of protest from the children apparently settled that idea in the negative.

The only other possibility I could see as a landing strip was a sort of rough road that led from the pond up to the barn. It was actually a cattle trail formed by untold generations of cows being herded between the barn and the pond, and their hooves had compacted the earth very solidly between two rambling fences. It was heavily overgrown with grass and weeds, but as far as I could discover the earth was fairly even, unfurrowed and free of ledge outcrops—which were in evidence almost everywhere else.

Pacing off the distance carefully, I determined that if I made my landing flare over the pond (landing uphill) I would have at least 200 yards of smooth "runway." The terrain rose about four percent to the north. The cowpath was only a few feet wide, but with a little mowing I could carve out a strip 15 to 20 feet wide—plenty for a slow, light, vintage taildragger.

My neighbor, Jim Morgan, saw me pacing the land and came over to ask what I was planning to do. When I told him he looked very thoughtful and kept repeating, "An airplane on the mountain?" He confirmed my impression that the air currents there generally flowed upslope in the morning and downslope in the afternoon—ideal for my intended operation.

Then he told me that if he were me he would get the grass all around the cow trail cut and put down a bed of gravel. I knew he did some roadwork, and thought he might be looking for a little business. I explained to him that I planned to mow, and that the kind of airplane I needed was at home on the sod, and that gravel, in fact, might damage a fabric-covered plane. He still looked pensive.

I started looking for some mowing equipment, but then I got so busy traveling around in search of the right airplane that I let it go. After about two months I found just what I was looking for in the way of a short field tail dragger—a J-4 *Cub Coupe*. Built by Bill Piper in 1938 it originally sold for just under $2,000. It cost me six, but I thought that was a bargain, considering it was in mint condition and exactly what I wanted.

With its 65 hp Continental engine and an empty weight of 750 lbs., the J-4 could land in about 500 feet and takeoff after a ground roll of 450 feet—on the straight and level, with no wind. Taking off downslope and against the wind; and landing upslope and against the wind at my mountain home, I figured, would be a piece of cake.

After a thorough checkout in my newly acquired airplane I ferried the J-4 to a nearby airport with sod runways. I spent the rest of the summer getting really well acquainted with it, with the help of an instructor.

The J-4 was a joy to fly. It was one of the earliest side by side models, which facilitated instruction greatly—a feature I expected to appreciate even more when I would teach my youngsters to fly. Instrumentation was minimal, so there was no need to get your head stuck in the cockpit. You had altimeter, tachometer, airspeed indicator, oil pressure/temperature gauge, and a compass; everything else is handled by your eyes and the seat of your pants.

The *Coupe* was both forgiving and responsive—even acrobatic when it was new. The 65 hp Continental gave you a simple set of numbers: 135 mph red line (100 mph at level or climb), 70 mph cruise (with a climb prop), 60 mph approach and departure speed, and 42 mph stall.

The framework was tubular steel, with fabric covering. Dimensions were: overall 22′6″, wingspan 36′2″ (with a high wing giving a generous 7′ clearance over the ground). The tail wheel swiveled, but you steered entirely with rudder and the brakes. The fabric was painted bright yellow, and I was as proud as Punch to own it.

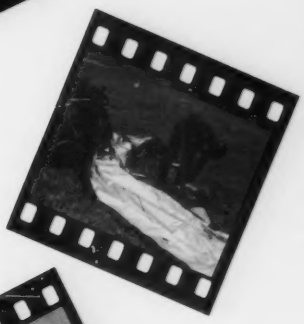
When I felt close to being ready to bringing the J-4 home, I flew over my cow trail runway with the instructor and asked his advice on how to handle it. He said simply, "Land somewhere else."

I showed him all the data I had worked up on the basis of calibrated performance at grass strips elsewhere, and he had no argument with it. His main objection was that I was leaving myself no margin for error. "Look," he said, "if you land short you're in the drink. Long, and you're into the barn. Drift off the centerline and you are into the brush—or God knows what. I know—you're a

(continued on back cover)

An Inflatable Airplane?

A unique inflatable aircraft developed by Goodyear Aerospace Corporation, proposed for use as an advanced military drone, a remotely piloted vehicle or an escape/rescue vehicle. The firm built and test flew 12 of the aircraft during the 1950s.



In an age when everyone is looking for a cheaper, but better way of doing things, it is always intriguing to look back and see what has been done before. Familiar as we are with the wide variety of today's ultralights and homebuilts, many of the offbeat concepts tried over the past half century still make us pause and do a double take. For example, in 1947 inventor Robert Fulton developed the *Airphibian*, a flying car; and in 1955 Goodyear Aerospace Corporation conceived the *Inflatobird*, an inflatable aircraft.

The entire *Inflatobird* was made of rubber-coated nylon fabric using drop thread to hold the fabric surfaces together and to form the proper aerodynamic shape. The only major exceptions to "software" materials were the 60 hp engine with a 20 gallon fuel tank, guy wires, and wooden propeller. The aircraft cockpit could accommodate either one or two persons and the flight controls consisted of a "joy stick" and foot pedals. There was almost no instrumentation. An inflation pressure of 8.5 pounds per square inch created an aircraft 19.2 feet long with a wing span of 28 feet, and a cruise speed of 60 knots. Its range was 5.4 hours without refueling.

The Korean conflict (1950-52) was being waged when military needs brought about the development of a multi-use airborne vehicle. To begin with, some means was needed to facilitate the rescue of downed airmen behind enemy lines without exposing U.S. forces to further casualty losses. Accordingly Goodyear devised the *Inflatobird* which could be parachuted behind the lines in a 30" diameter cylinder, or pod, that was 84" long. Within six minutes the aircraft could be inflated, assembled, and ready to fly.

But the primary role of the *Inflatobird* was as a drone or remotely piloted vehicle (RPV). Television cameras on board would allow the pilot, who was controlling the RPV from the ground by radio, to see and report what was going on in the field.

One of the great advantages of this inflatable bird was that it could be deflated, packaged, and stored indefinitely and required virtually no maintenance while in storage. Also, because of its unique structure, it was capable of absorbing several enemy gunfire hits without losing full flight characteristics (assuming no vital components were disabled). By using the aircraft as a RPV, the military would not be risking lives or multi-million dollar aircraft on such missions as reconnaissance.

However, with the end of the Korean war military interest in this unusual aircraft waned. Although 12 aircraft had been built and tested by the end of the 1950's, the project was put on the shelf. It was not until the Vietnam war expanded in the 1960's, that the *Inflatobird* was taken off the shelf and re-examined for its usefulness.

The decision was made that the need for such a vehicle still existed. So by 1971 the project was ready to be re-introduced to the battlefield. But given the de-escalation of this conflict, and the rapidly expanding all-purpose use of helicopter gunships, this new concept was abandoned as not economically feasible.

Is there a peaceful future for the *Inflatobird*? Could it, or something like it, become a modern popular sport plane, or short distance commuting vehicle that could be transported on the rack of your car?

Who can say? ■

Minimum Equipment Options

New rules give pilot/owner independent authority

Which items of equipment could be inoperative without rendering your aircraft **unairworthy?** Until recently the answer was, in a word, NONE. Existing regulations led to a policy which made it illegal to fly an airplane with any piece of equipment whatsoever inoperative—be it a blown light bulb, a burned-out cigarette lighter, a broken windshield wiper, etc.

The rationale for this policy was self-evident. Given the close proximity of equipment and instrument installations in a cockpit, even a luxury item which failed could affect the circuitry of essential equipment—in the absence of an evaluation of the malfunction by a professionally qualified individual.

However, considerable studies of flight experience have led FAA to the conclusion that in view of the very considerable redundancy designed into modern aircraft, inoperability of some installed components, under certain conditions, would not degrade safety.

Consequently, the concept of the Master Minimum Equipment List (MMEL) was developed, with participation by the aviation industry, to increase aircraft utilization for commercial aviation and to provide relief for pilots and operators. MMEL's were developed for all FAA type-certificated multi-engine airplanes in general usage. A generic single engine aircraft MMEL was developed which is applicable to most single engine airplanes and helicopters. The FAA-approved MMEL specified those items of equipment which *in certain models and/or categories of aircraft may be inoperative under certain conditions.* The Master List is the basis for developing a Minimum Equipment List (MEL) for a particular individual's aircraft, taking into consideration the equipment currently installed and the purpose for which the aircraft is to be used.

It is important to understand that an MEL, or MMEL, refers only to potentially acceptable inoperative equipment: *it is not a list of required equipment.*

The latter items of equipment are specified by the type certificate and the operating certificate. The pilot is responsible for assuring that all required equipment is onboard and operable prior to departure. Furthermore, all provisions of Aircraft Flight Manual Limitations, Emergency Procedures, or Airworthiness Directives, take precedence over the MEL. The final determination as to whether a flight may be made safely is always up to the pilot who ultimately returns the aircraft to service. MEL conditions and/or limitations do not relieve him of that responsibility.

The initial rulemaking on this subject authorized MEL's for various types of multi-engine, turbine-powered and air carrier aircraft. The latest rule changes, effective December 13, 1988, give an option to operate with or without the MEL to general aviation pilots of small rotorcraft, nonturbine-powered small airplanes, gliders and lighter-than-air aircraft for which a master MEL has been developed. Now if they wish to fly with certain equipment inoperative they may either apply for their individual FAA-approved MEL, or they may seek authorization under a new relatively simple, pilot decision-making sequence which does not require formal FAA approval.

The new regulations which provide for

these alternate means of compliance in general aviation are contained in Sections 43.11(b); 91.30(a)(b)(c)(d); and 91.165(a)(b)(c)(d) of the Federal Aviation Regulations.

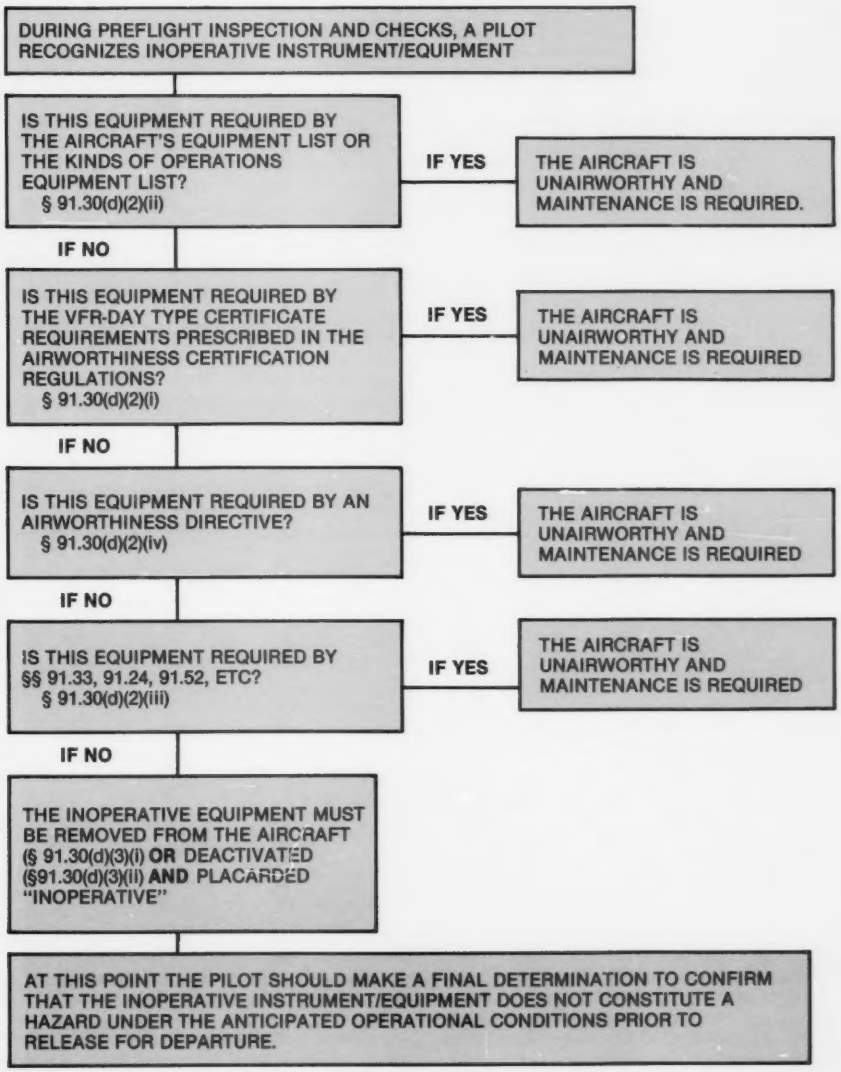
The optional pilot decision-making sequence involves the pilot consulting the aircraft's operating equipment list or Kinds of Operations Equipment List; the type certificate; all current airworthiness directives; and all pertinent airworthiness regulations (See Figure 1). The pilot may be required to consult with qualified maintenance personnel as regards type certification details or compliance with airworthiness directives and, in some case, for deactivation of equipment. The pilot must assure that all inoperative equipment is properly deactivated and placarded, and appropriate maintenance entries are logged (Figure 2).

However this sequence of activities is usually less time-consuming than the development of an MEL, which requires initially a consultation at the local FAA General Aviation or Flight Standards District Office (GADO or FSDO), followed by a study of the appropriate Master MEL, completion of the required paperwork in a given format, and adoption of certain maintenance and crew operating procedures, as well as other restrictions. Finally a formal letter of authorization for the MEL must be issued by the District Office. The period of validity may be limited and, under certain conditions, the letter could be recalled. It must be surrendered, if the pilot or operator elects to use the option plan.

There are two important facts to remember. If you sell the aircraft, the new owner must apply for a new MEL. Also, if a revision to the MEL is made by the operator, it must be approved by FAA and another letter of authorization issued.

An advisory circular addressing all aspects of flying with inoperable equipment is under preparation and should be available to the public in the near future. ■

FIGURE 1 PILOT DECISION SEQUENCE


DURING PREFLIGHT INSPECTION AND CHECKS, A PILOT RECOGNIZES INOPERATIVE INSTRUMENT/EQUIPMENT
IS THIS EQUIPMENT REQUIRED BY THE AIRCRAFT'S EQUIPMENT LIST OR THE KINDS OF OPERATIONS EQUIPMENT LIST? § 91.30(d)(2)(ii)
IF YES
THE AIRCRAFT IS UNAIRWORTHY AND MAINTENANCE IS REQUIRED.
IF NO
IS THIS EQUIPMENT REQUIRED BY THE VFR-DAY TYPE CERTIFICATE REQUIREMENTS PRESCRIBED IN THE AIRWORTHINESS CERTIFICATION REGULATIONS? § 91.30(d)(2)(i)
IF YES
THE AIRCRAFT IS UNAIRWORTHY AND MAINTENANCE IS REQUIRED
IF NO
IS THIS EQUIPMENT REQUIRED BY AN AIRWORTHINESS DIRECTIVE? § 91.30(d)(2)(iv)
IF YES
THE AIRCRAFT IS UNAIRWORTHY AND MAINTENANCE IS REQUIRED
IF NO
IS THIS EQUIPMENT REQUIRED BY §§ 91.33, 91.24, 91.52, ETC? § 91.30(d)(2)(iii)
IF YES
THE AIRCRAFT IS UNAIRWORTHY AND MAINTENANCE IS REQUIRED
IF NO
THE INOPERATIVE EQUIPMENT MUST BE REMOVED FROM THE AIRCRAFT (§ 91.30(d)(3)(i) OR DEACTIVATED (§91.30(d)(3)(ii) AND PLACARDED "INOPERATIVE"
AT THIS POINT THE PILOT SHOULD MAKE A FINAL DETERMINATION TO CONFIRM THAT THE INOPERATIVE INSTRUMENT/EQUIPMENT DOES NOT CONSTITUTE A HAZARD UNDER THE ANTICIPATED OPERATIONAL CONDITIONS PRIOR TO RELEASE FOR DEPARTURE.

PROCEDURES FOR AN ANNUAL INSPECTION

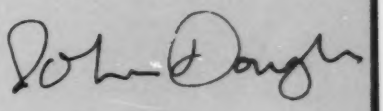
When an aircraft is inspected in accordance with an annual inspection all discrepancies should be repaired or replaced. If the owner does not want specific instruments or equipment repaired, then the certificated maintenance person must check each item to see if that inoperative equipment does in fact meet FAR §91.30(d) restrictions, and is not a hazard to the aircraft. He/she then must supply the owner a signed and dated list of all discrepancies and ensure that each item of equipment, authorized to remain inoperative, is PLACARDED.

FIGURE 2
SAMPLE MAINTENANCE RECORD ENTRIES

Preventive Maintenance Entry

April 15, 1989. Total time 460.00 hrs. Landing light bulb removed in accordance with (manufacturer's) Maintenance Manual Chapter 3, page 38 and in accordance with §91.3 and §43.11 of the Federal Aviation Regulations. Landing light switch placarded "INOPERATIVE," in accordance with §43.11 and §91.30 of the FARs.

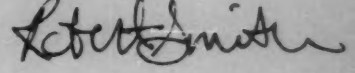
John Dough Pvt. Pilot 1234567



Maintenance Entry (FAR §43.9)

April 20, 1989. Total time 460.00 hrs. Aircraft heater and control switch deactivated by capping heater fuel lines in accordance with (manufacturer's) Maintenance Manual Chapter 4, page 4b. Heater control switch placarded "INOPERATIVE.

Robert Smith A&P 2134567



The ALCAN Highway, visual guide for pilots en route to Alaska, shown here alongside Teslin Lake in Canada's Yukon Territory.

FLYING TO ALASKA

Transport Canada has recently reviewed the popular *FAA Aviation News* reprint, "Alaska—Overland or Over the Sea," and offers the following updated information:

1. The Canada map office has a new and amended series of charts called "VFR Navigation Charts" (VNC). They use a format almost identical to U.S. sectional charts. A current legend of charts is shown.

2. The privately published chart package, "Flying the Alaska Highway," is no longer available. A similar publication is being prepared for the Canadian FSS's and will be available in 1990.

3. The Canadian *Airman's Information Publication* (AIP) subscription rate for mailing outside of Canada is $39.00 (Canadian) for an annual subscription. Prepayment is required to Canadian Government Publications Centre, Supply and Services Canada, Ottawa, Ontario, Canada K1A 0S9.

Pilots unfamiliar with Canadian Flight Rules are reminded that "VFR on top" is not permitted in Canada. The Canadian ATC term "remain VFR" means below the lowest broken or overcast layer.

Anyone interested in flying through Canada to Alaska might be interested in receiving a copy of the *FAA Aviation News* reprint, "Alaska—Overland or Over Sea." Either write or call for a copy at:

FAA AVIATION NEWS, AFS-20
800 Independence Avenue, SW
Washington, DC 20591
(202) 267-8102

TRANSPORTING WEAPONS

FAA has adopted a mandatory schedule of monetary penalties for persons found guilty of attempting to take firearms through airport screening points, either intentionally or unintentionally.

Except for law enforcement officers who have a demonstrated "need" for a weapon, the fixed penalties range from $1,000 to $10,000 per offense, according to whether the firearm was loaded, ammunition was accessible, efforts toward concealment were made, etc.

The only legal way to carry a firearm on a commercial aircraft is in checked luggage. Such weapons must be unloaded and declared to the carrier. If the weapon is a handgun, it must be in a locked case, with the key in the passenger's possession.

DIRECT ACCESS WEATHER

Forty percent of all general aviation fatal accidents have weather as a cause or factor. In an effort to reduce the number of weather related accidents, the Federal Aviation Administration has contracted with three commercial aviation computer services companies to provide automated weather accessible by computer known as DUATS (short for Direct User Access Terminal System).

By this fall pilots will be able to access DUATS by entering a toll-free 800 telephone number into the modem of a personal or business computer. This will allow the pilot to view aviation weather data, such as terminal and en route forecasts, and other flight planning information, such as NOTAMS. The system may also be used to file, amend, or cancel flight plans. This is another step in the flight service station modernization program and will reduce the communications burden of flight service station specialists.

MORE TCA'S COMMISSIONED

The list of Terminal Control Area's around the country is still growing. By the end of 1989 four more are scheduled to begin operation. They are located at: Phoenix, Salt Lake City, Charlotte, and Memphis.

In January of this year the Federal Aviation Regulations dropped all references to Group I, II, and III TCA's. They are now known by the single designation of TCA.

LATEST FAA PUBLICATIONS

NEW ADVISORY CIRCULARS

"Rule of Thumb for Avoiding or Minimizing Encounters with Clear Air Turbulence," Advisory Circular 00-30A, has been revised. The AC also describes, for the benefit of pilots, aircrew members, dispatchers, and other operations personnel, the various types of clear air turbulence and some of the weather patterns associated with it. The advisory circular is available free from DOT, M-443.2, Washington, DC 20590.

ATP TEST STANDARDS

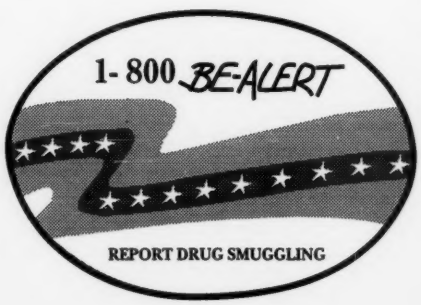
Standards for the airline transport pilot and the type rating practical test for all airplane and helicopter categories have been published. These are the standards to be used by inspectors and examiners in conducting the practical test. Flight instructors and applicants may find them helpful in test preparation.

To obtain a copy of the standards, send a check or money order for $2.00 to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325. Request: FAA-S-8081-5, Airline Transport Pilot and Type Rating Practical Test Standards, Stock number: 050-007-00809-1.

PILOT ALERT SOUGHT ON AIRCRAFT DRUG USE

All pilots are urged to report to local law enforcement officials the presence of any aircraft which appear to be operated for purposes of transporting illegal drugs. Alternately, the toll-free Federal enforcement number 1-800-BE ALERT may be called.

Suspicious signs would include unauthorizied modifications for cargo, late night operations, illegal or absent N-numbers and unusually guarded behavior on the part of crew members.



FAA AVIATION NEWS welcomes comments from our readers. No anonymous letters will be used, but names will be withheld on request. Address: FAA AVIATION NEWS, AFS-20, Washington, DC 20591.

• VFR Over Deck = IFR?

I have heard that if you are VFR above a solid cloud cover, you can log this time as actual instrument time, inasmuch as you are navigating solely by reference to instruments.

Name Withheld

Not true. If you are VFR over a cloud deck you still must be able to maintain some visual references, such as angle of horizon, distant landmarks, etc. FAR §61/51 (c)(4) states, in part, that a pilot may log as instrument flight time only that time during which he or she operates the aircraft **solely** by reference to instruments, under actual or simulated instrument flight conditions.

• 2nd Class Medical

In the Jan/Feb 1989 issue of FAA Aviation News *your reply to a letter regarding CFI's and the medical stated that a CFI does not need a 2nd class medical to give flight instruction for compensation.*

For clarification, would you please identify the conditions of flight that do require that the pilot possess a 2nd class medical.

Eleanor Todd
Newport Beach, CA

For any flight under conditions that require the PIC to exercise the privileges of a commercial pilot's certificate, that pilot would also be required to hold a valid second class medical certificate—with the following exception:

When on board a glider or free balloon (no medical of any class is required).

• Approach for Latrobe

I've been having difficulty figuring out the correct course reversal procedure when cleared for the Latrobe (PA) RNAV 5 approach from BENJE intersection or anywhere in the north quadrant. I assume that a procedure turn is required or else something was omitted from the approach plate, such as "Radar Required," or a holding pattern in lieu of the PT at the PLEEZ final approach fix.

Col. John P. Cotton
Alexandria, VA

The Approach Plate for RNAV RW5 at Latrobe, PA is correct as printed.

Procedure turns are designed only into those instrument approaches where, in view of the traffic flow, the terrain conditions, and the runway configurations, a PT is considered necessary. For approaches where no procedure turn symbol (barbed spur) is shown, the PT is neither prescribed nor authorized.

At RNAV RW5 Latrobe, approaching traffic will be routed to the Initial Approach Fix in such a manner as to enable the pilot to turn onto the approach without a procedure turn.

• Overly Brief

The article "Speaking Up" in your January/February issue advocates using the phrase "have numbers" in lieu of stating the ATIS code that the pilot has monitored. Not only is this highly unprofessional and in direct contradiction to the procedures outlined in the AIM, it does not tell the controller whether you have the current conditions. Many things can change between the first contact with TRACON and the final approach fix.

Name withheld
San Francisco, CA

We agree.

• AWOS-3 and 135 Ops

Could you comment on whether using weather data from an AWOS-3 (only) meets the regulatory requirements for executing instrument approaches under FAR Part 135?

Bennett E. Taber
San Francisco, CA

Part 135 and 121 operators may initiate an instrument approach if the AWOS-3 is providing date, time, altimeter setting, winds and visibility.

Part 91 operators need only the altimeter setting. See FAA Order 8000.69.

• Striped Interloper

I'm sure you will receive many comments on your excellent article, "Speaking Up" (FAA Aviation News, January-February, 1989). The importance of clear and standard phraseology in Air Traffic Control communications cannot be overemphasized. Was the inclusion of "Zebra" as the last letter of the phonetic alphabet a test?

Kaye B. McLeod
Cedar City, UT

Not really. It looks to us like an "Anonymouse" incident.

Thank you for the correction, and the compliment.

• What's New in the GAP?

As a pilot living in the mid-continental (LORAN-C) gap I read your article "Closing the Gap" in the March/April 1988 issue with great interest.

It is almost a year later now. Perhaps it would be a good idea to give us an update in "Flight Forum" in the next issue of FAA Aviation News.

Louis W. Staalberg
Scottsdale, AZ

In 1988 transmitter sites in Montana and Wyoming were required, and building designs were completed. Thus far in 1989, the first transmitter has been manufactured, and environmental testing was accomplished in Oklahoma.

INSTRUMENT CORNER

• A + B = X

A point of confusion exists among some of us in the required information of Blocks 10 and 11 of the Flight Plan for IFR. Assume an IFR flight is planned from point A to B, with an estimated time enroute of "X" minutes. The pilot further decides to do "Y" minutes of practice approaches at point B prior to landing, and enters that fact in the "remarks section (Block 11) of the Flight Plan. But, does the pilot show "X" time, or "X+Y" time in Block 10 as estimated time enroute?

Name withheld on request
Auburn, AL

Block 10 of the IFR Flight Plan should provide the estimated time from departure to arrival at the initial approach fix. Additional intentions, such as practice approaches, should be noted under "Remarks" (Box 11).

• IFR Currency in Trainers

I am writing concerning simulated instrument time attained with the use of an FAA accepted ground trainer. FAR §61.57(e) allows the use of a ground trainer to partially meet IFR currency requirements. Is time logged in this ground trainer allowable for IFR currency requirements if no active instruction has been given by a CFII? Does ground trainer plotting capability have an affect on such time? My questions assume a pilot who is still IFR current or is within the six month "grace period" allowed by 61.57(e)(2) and otherwise does not require a competency check by a CFII to regain currency.

Robert W. Helzer
Littleton, CO

Under FAR §61.57, time logged in a ground trainer used to satisfy the instrument currency requirement of Part 61 must be certified by the appropriately rated and certificated instructor from whom it was received. The ground trainer used must be one which is acceptable to the FAA for the purpose intended. It may or may not have plotting capability.

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Where There's A Hill There's a Way

(continued from page 10)

good pilot, and you don't usually make mistakes. But you might, assuming you're human."

I did not argue with him, but I felt confident about landing on the mountain side, and I did not want to wait for the snow to fly. On the first favorable afternoon I flew up over the ridge and circled the barn to check on the windsock. It extended straight down the slope—just what I needed.

My first pass over the barn did not go unnoticed. My wife, children, their friends, and about a dozen neighbors gathered around to witness this historic event.

My approach was right on the money. I had learned to slip into all my landings, which works just as well for losing altitude as the flaps which the airplane did not have. I flared over the pond, touched down on the cow trail and rolled to a stop a full 200 feet short of the group of well-wishers gathered at the barn. I pushed the throttle nearly full again, to raise the tail for an upslope taxi. After taxiing about 100 feet I pulled the throttle out.

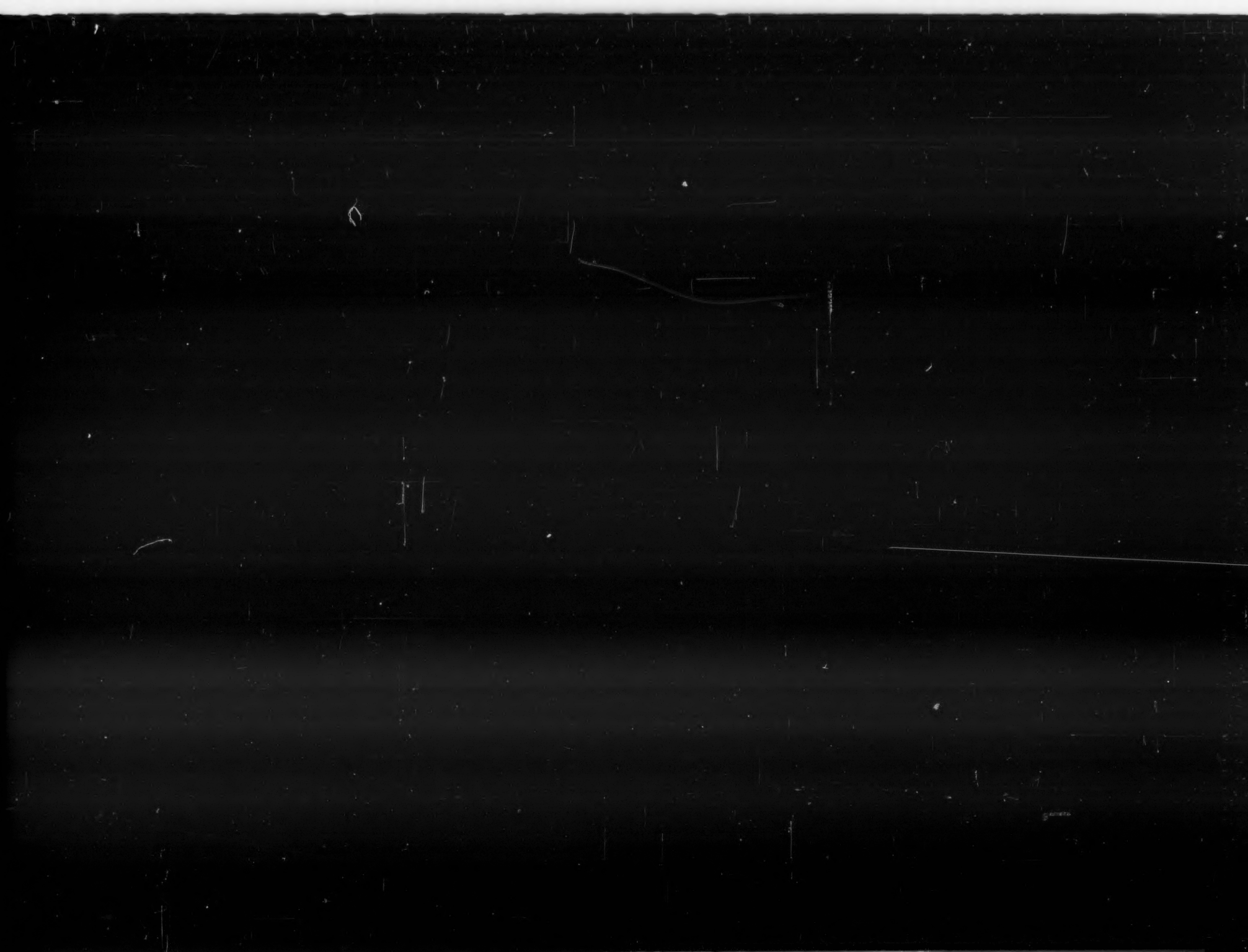
At least I attempted to pull it out but it stuck at fast idle. I had an agonizing memory flash of this problem having occurred before, in practice, and my making a mental note to order a new cable—which I had not followed through on.

Meanwhile, the J-4 was charging too fast toward the barn, into which my reception committee had retreated. I held the tail up high, to keep the plane from getting airborne, but the throttle still would not unstick. I cut off the ignition, and as braking on that damp grass seemed to have little effect, I stamped on the right rudder and applied full right stick. The nose swung around just short of the barn. The left wingtip careened off a large bush and something snapped. The airplane finally stopped.

My audience seemed to melt away, except for my wife. After she had ascertained that I was uninjured, she asked whether I wasn't getting a little old to play with airplanes. Repeating the old adage, that any landing you walk away from is a good one, only seemed to irritate her.

Damage was apparently confined to a broken wingtip bow, some torn fabric, and a twisted tail wheel mount. With Morgan's help I got the airplane into the barn, where it would await the coming of a mechanic and the advent of spring.

I stopped feeling bad about the accident when I realized I had finally understood what my J-4 instructor meant about leaving room for errors. It was not just the kink in the throttle cable that did me in. That set me up for trouble, but not having cleared out the brush and the grass—plus electing to fast taxi over uncertain ground—was what made it impossible to cope with the problem. Suppose my wing had encountered an old fencepost, or a stonepile? I thought about other difficult flight situations I had handled without incident, and decided I had probably been luckier than I knew.

I spent the winter weekends clearing out a 30 foot wide strip, and a 50 foot ramp. I am ready now.

Ron Dreyer ■